DOCUMENT RESUME

ED 312 226 SP 031 522

AUTHOR Glasgow, Melanie C.
TITLE Learner Motivation: Can It Be Increased by the "Free-Homework" Pass.
PUB DATE 1 Aug 89
NOTE 15p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Homework; Junior High Schools; Junior High School Students; *Learning Strategies; *Rewards; *Student Motivation

ABSTRACT

This paper describes the effect of a tangible reward system that was used as a motivator for 92 average-ability suburban junior high school students in an earth science class. Every 2 weeks a student's cumulative performance on daily classroom work and homework was monitored. Each student who completed 100 percent of the work assigned over the 2 weeks was given a "free-homework" pass. The pass could be used in replacement of a future homework assignment for a grade of 100. For a student to receive credit for completing an assignment, a grade of 70 percent or above for the task was required. The pass was a certificate publicly presented to the applause of the other students in the class. Data were collected for a period of 12 weeks, 6 weeks for the pre-treatment and 6 weeks for the treatment period. An analysis of data collected during the treatment indicated that the recognition reward was effective. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED312226

LEARNER MOTIVATION: CAN IT BE INCREASED BY THE "FREE-HOMEWORK" PASS

MELANIE C. GLASGOW

DEPARTMENT OF EDUCATIONAL CURRICULUM
AND DEVELOPMENT
TEXAS A&M UNIVERSITY
COLLEGE STATION, TEXAS

August 1, 1989

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

M.C. Glasgow

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

SP 031 522

BEST COPY AVAILABLE

ORIENTATION TO THE PROBLEM:

On the mind of all teachers daily is the persistent question "How can I motivate my students?" Day after day teachers face the kinds of problems that are summed up in the following, familiar saying. "You can lead a horse to water, but you can't make him drink" (Good & Brophy, 1987). When a teacher looks for solutions to these problems, he or she finds many literatures exist on the general topics of motivation and learning, but the discipline of educational psychology has relatively little to say to teachers about how to develop motivation to learn in their students (Brophy, 1983).

Traditionally motivation has been interpreted as a state of arousal or drive that energizes people and orients them toward instrumental behavior (Brophy, 1983). However, motivation can be addressed from two perspectives; motivation is influenced by external objects, events, or organisms, or from internal processes. Furthermore, many of the other factors that influence student motivation are beyond teachers' control. Some of these influences are a student's family, peers, and previous experiences (Trowbridge & Bybee, 1986).

Motivation originating from within the individual is commonly referred to as intrinsic motivation. This approach to learner motivation is based on the idea that teachers should select or design academic tasks that students will find inherently interesting and enjoyable, so that they will engage in these tasks willingly without need for extrinsic incentives. But, according to many researchers, this is difficult for teachers to accomplish

in typical classroom situations. Teachers' motivational attempts in the school setting are complicated by the grading system and the public nature of most teacher-student interactions (Good and Brophy, 1987).

Motivation influenced by external objects and events is generally referred to as extrinsic motivation. Extrinsic strategies are in some ways the simplest, most direct, and most adaptable for a typical classroom setting. Students do not invest their efforts on tasks that do not lead to outcomes they value even if they know that they can perform the tasks successfully. Extrinsic rewards link task performance to delivery of consequences that the student values (Good & Brophy, 1987).

A popular type of extrinsic motivation is a recognition reward. These rewards involve some means of giving attention to the student. Examples are awarding a certificate for achievement, displaying student work, or verbally citing students' accomplishments (Emmer, Evertson, Sanford, Clements & Worsham, 1984). This type of reward appears to guide behavior more effectively because there is a clear goal and a clear path to follow in striving to reach that goal (Good & Brophy, 1987). This study is designed to investigate the positive and negative effects of a recognition reward given for consistent work performance.

STATEMENT OF THE PROBLEM AND RESEARCH:

Many students do not complete or even attempt homework or daily classroom work on a regular basis. These students are unmotivated, distracted, and see no reward for completing assignments. Rewards are one proven way to motivate students to put forth effort, especially when the rewards are offered in advance as incentives for striving to reach specific levels of performance. The effort that students are likely to invest in an academic task will be determined by how much they value the task and the rewards associated with completing it successfully (Good & Brophy, 1987).

Many students have trouble seeing the long-term effects of accomplishment. This appears to be especially true at the junior high level, where students seem to need immediate, tangible rewards. It is commonly believed that extrinsic rewards are effective in motivating students to perform, but by themselves, do nothing to develop student motivation to learn (Brophy 1983). Nevertheless, the intended result of extrinsic rewards is, when given a goal to strive for (the recognition reward), students will value the success in achieving that goal. Then in doing so, the student will develop a need for further success and consequently strive to learn more (the intrinsic motivation). Given this problem the research question directing this investigation was: Does a tangible reward system increase the frequency of homework tasks completed by Earth Science students?

DESCRIPTION OF SAMPLE:

Knox Junior High, the school where this investigation took place, is located in a suburb of north Houston called The Woodlands. The socioeconomic status of this area is predominantly middle class to upper middle class. Participants in this investigation were eighth grade Earth Science students. At Knox, the science classes are divided into five ability levels: Masterworks (gifted and talented), K-level (above average), L-level (average), M-level (below average) and resource. The students involved in this study were all L-level science students. Data were collected from four different classes, Period 2 - 22 students, Period 3 - 25 students, Period 4 - 20 students, and Period 5 - 25 students.

TREATMENT:

Every two weeks a student's cumulative performance on daily classroom work and homework was monitored. Each student who completed one hundred percent of the work assigned over the two weeks was given a "free-homework" pass. The pass could be used in replacement of a future homework assignment for a grade of 100. For a student to receive credit for completing an assignment, he or she had to achieve a grade of 70% or above on the task. The "free-homework" pass was a certificate publicly presented to the student for their accomplishment. When students were given the reward, the class as a whole applauded in appreciation of their success.

This was not a response commanded by the teacher but a spontaneous reaction the students started on their own that continued each time passes were distributed.

Experimental Design:

Data were collected for a period of twelve weeks, six weeks for pre-treatment period (PRTRP) and six weeks for treatment period (TRP). This investigation was conducted during the final two six week periods of the school year. The data collection schedule can be illustrated as follows:

Table I Data Collection Schedule.

PRTRP				TRP		
X_0	X_1	X_2	T	X'_0	X'_1	X'_2

X = data collection at two week intervals
T = treatment begins

The dependent variable for this investigation was the number of homework assignments completed and submitted, while the independent variable was the incorporation of a "free-homework" pass into the instructional system.

acronyms Used.

PRTRP	- pre-treatment period.
TRP	- treatment period.
SPRTOT	- total number of assignments completed by each student during PRTRP.
STRTOT	- total number of assignments completed by each student during TRP.
CLPRTOT	- total number of assignments completed by a class during PRTRP.
CLTRTOT	- total number of assignments completed by a class during TRP.
CL3PRTOT	- total number of assignments completed by a class during the third two-week interval of PRTRP.
CL3TRTOT	- total number of assignments completed by a class during the third two-week interval of TRP.
GRPRTOT	- total number of assignments completed by all 4 classes during PRTRP.
GRTRTOT	- total number of assignments completed by all 4 classes during TRP.
GR3PRTOT	- total number of assignments completed by all 4 classes during the third two-week interval of PRTRP.
GR3TRTOT	- total number of assignments completed by all 4 classes during the third two-week interval of TRP.

DATA ANALYSIS TECHNIQUES:

Each two week interval during PRTRP and TRP was considered separately. This was done because the "free-homework" passes were distributed every two weeks. During both PRTRP and TRP eleven assignments were given. These assignments varied in nature from vocabulary and reading comprehension questions to creating illustrative diagrams. A comparison of student pre-treatment totals (SPRTOT = total number of assignments completed by each student during PRTRP) to student treatment totals (STRTOT = total number of assignments completed during TRP) was evaluated.

A chi square test was used to test for statistical differences in homework completion before and during the treatment. Chi square can test the hypothesis that the frequency distribution among the categories on one variable is independent of the distribution on the other variable (Elzey, 1985). This chi square technique was used on three sets of data. The first was CL3PRTOT (total number of assignments completed by each class during the third two-week interval of PRTRP) versus CL3TRTOT (total number of assignments completed by each class during the third two-week interval of TRP). This correlation was made because the treatment employed was expected to have its greatest effect at this point. The second comparison was between CLPRTOT and CLTRTOT. Thirdly, the four classes were combined and treated as a single population, (GRPRTOT = group pre-treatment totals) versus (GRTRTOT = group treatment totals).

RESULTS OF DATA ANALYSIS:

The resulting chi square tests varied in their statistical significance from class to class. For CL3PRTOT versus CL3TRTOT chi square calculated probability (p) for each class is as follows:

Table II CL3PRTOT vs. CL3TRTOT

Class Period	Number of Students	Chi^2	P value
2	22	.028	.867
3	25	7.510	<.010
4	20	2.800	.094
5	25	2.220	.136

For CLPRTOT versus CLTRTOT chi square calculated probability (p) is as follows:

Table III CLPRTOT vs. CLTRTOT

Class Period	Number of Students	Chi^2	P value
2	22	.012	.914
3	25	3.157	.076
4	20	6.133	.013
5	25	3.944	.047

Yet, when the four classes were combined and treated as a single population, the chi square test was most significant. The following table (Table IV) shows the chi square calculation for GRPRTOT verses GRTRTOT. This was a comparison between total number of completed assignments before treatment versus total number after treatment.

Table IV Chi Square Calculations: GRPRTOT vs. GRTRTOT

	Observed	Expected	Chi Square
Column 1			
	775	805.000	1.081
	237	207.000	4.204
Column 2			
	835	805.000	1.081
	177	207.000	4.204

Chi Square Test of Independence
Chi Square = 10.570
Degrees of Freedom = 1
(Corrected for Continuity)
P < .01

Table V shows the chi square calculation for GR3PRTOT versus GR3TRTOT. This was a comparison between total number of completed assignments during the third two-week interval of pre-treatment period versus completed assignments during the third two-week interval of treatment period.

Table V Chi Square Calculations: GR3PRTOT vs. GR3TRTOT

Observed	Expected	Chi Square
Column 1		
266	283.000	.962
102	85.000	3.203
Column 2		
300	283.000	.962
68	85.000	3.203

Chi Square Test of Independence
Chi Square = 8.330
Degrees of Freedom = 1
(Corrected for Continuity)
P < .01

Discussion and Conclusion:

During both pre-treatment and treatment periods the theoretical value for group totals equaled 1012 (11 assignments x 92 students). The observed values for group totals were pre-treatment = 775 and treatment = 835. The use of the chi square calculation determined whether the differences between the observed and theoretical frequencies were significant (Ferguson, 1955). That is, when comparing the pre-treatment period to treatment period this calculation determined the probability of deriving the same numbers just by chance or was there some eventful factor that acted on the variables that resulted in a change.

For this investigation an alpha value of .05 was used to determine statistical significance. When the four classes were combined and treated as a single group, the chi square probability value (p) calculated for both sets of data was below the pre-determined alpha level of .05. This determined that the treatment did have an effect on the number of tasks completed and submitted for the group.

When evaluating the classes separately, however, the values calculated by chi square varied from class to class. As shown in tables II and III, the treatment appeared to have no effect on period 2. This may have occurred because the application of a strategy that increases motivation in some students may decrease motivation in others (Brophy, 1983). On the other hand, periods 3, 4, and 5 displayed an increase in the number of assignments completed and submitted during the treatment.

Therefore, the researcher views the treatment (the recognition reward) as effective in view of the data obtained. Extrinsic motivators can be useful tools to aid the teacher in promoting learner motivation. The data seems especially significant, considering the time of year in which the treatment was incorporated. Motivation is not simply a state to be attained before learning begins, but rather one to be maintained in learners during all the time they remain in the learning situation (Gagne & Driscoll, 1988).

However, it is strongly held by the investigator that a teacher cannot depend solely on this type of motivation. Other factors such as classroom environment, teacher attitude, and instructional methods all play powerful roles in a learner's success. It may be seen, therefore, that motivation originates from both external and internal sources. The stimulation that is used to produce attention and the informational feedback that gives rise to reinforcement are recognizable as external factors. However, these produce internal states of learner interest and satisfaction that become persisting sources of motivating the student to learn and to achieve (Gagne & Driscoll, 1988).

References

Brophy, J. (1983). Conceptualizing student motivation, Educational Psychologist, 18:3, 200 - 215.

Elzey, F. (1985). Introductory statistics: A microcomputer approach. Monterey: Brooks\Cole Publishing Company.

Emmer, E., Evertson, C., Sanford, J., Clements, B., & Worsham, M. (1984). Classroom management for secondary teachers. Englewood Cliffs: Prentice-Hall Inc.

Ferguson, G. (1966). Statistical analysis in psychology and education. New York: McGraw-Hill, Inc.

Gagne, R. M. & Driscoll, M. P. (1988). Essentials of learning for instruction. Englewood Cliffs, NJ: Prentice Hall.

Good, T. & Brophy J. (1987). Looking in classrooms. New York: Harper and Row Publishers.

Trowbridge, L. & Bybee, L. (1986). Becoming a secondary school science teacher. Columbus: Merrill Publishing Company.